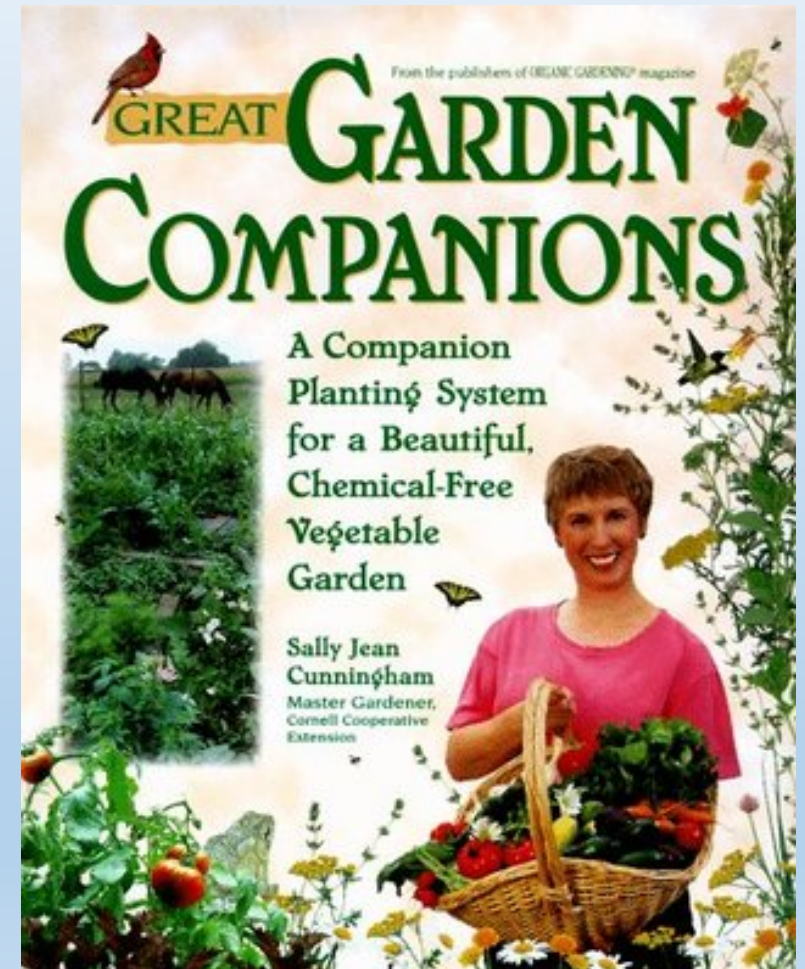
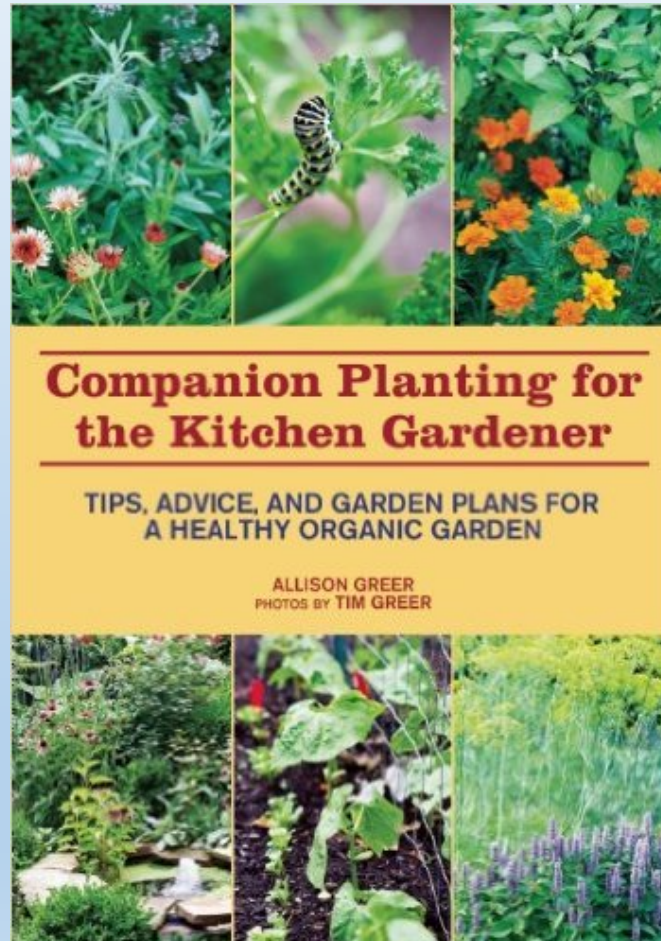
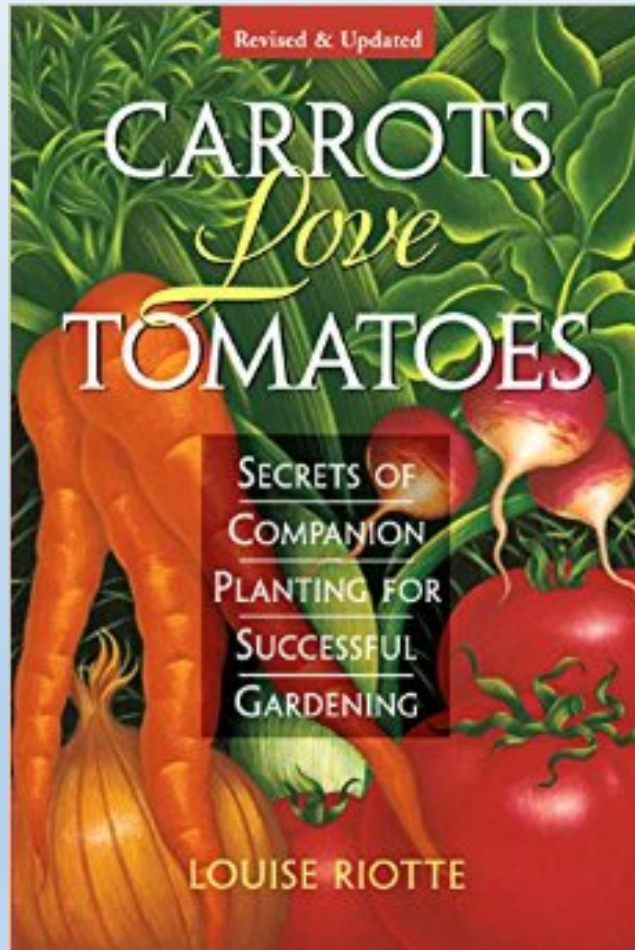


Companion Planting



Some great books



Planting the same crop in rows creates an easy to find buffet for insects.

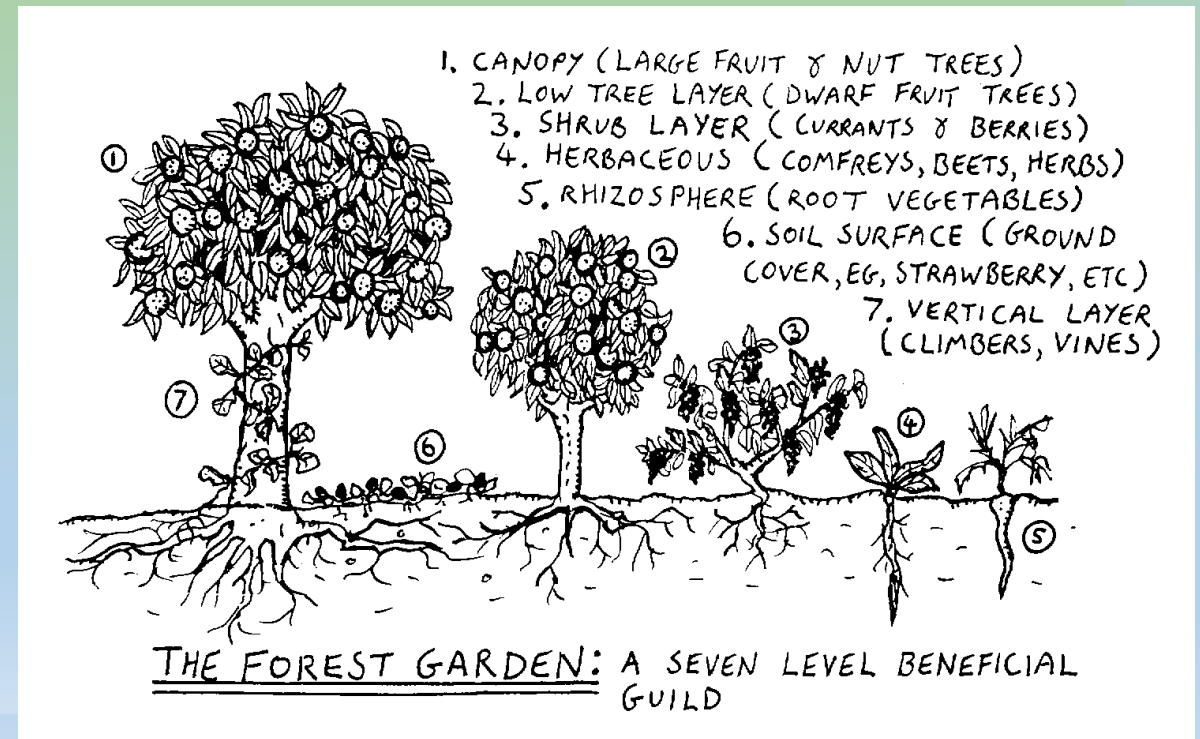


Companion Planting works in several different ways?

- **Protector Companions:** —Tall plants, for example, provide shade for sun-sensitive shorter plants.



<http://deepgreenpermaculture.com/>



<http://www.bastyr.edu/>

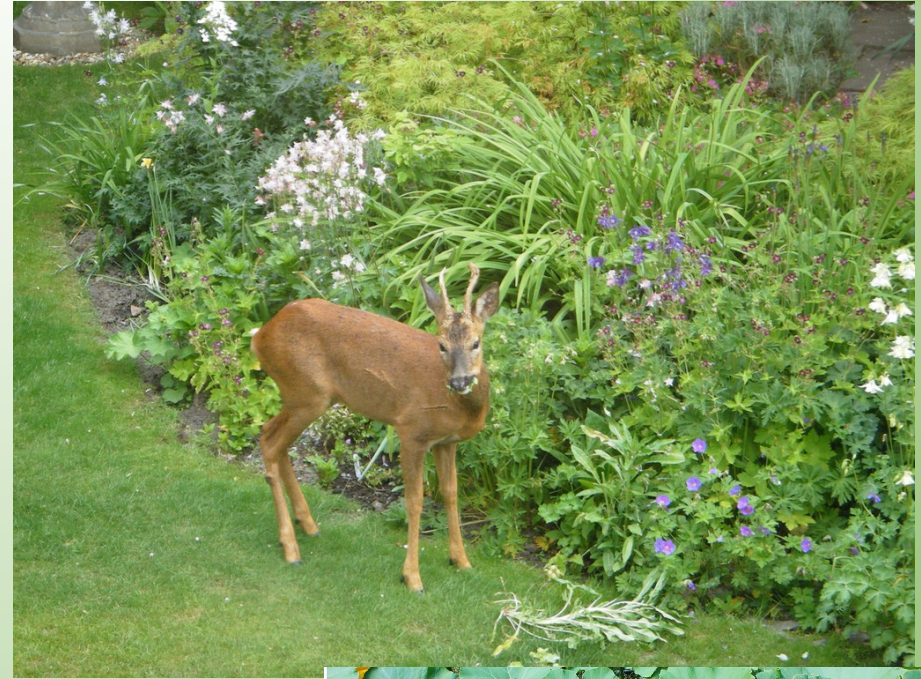
Protector
Companions:
using Corn to
shade greens



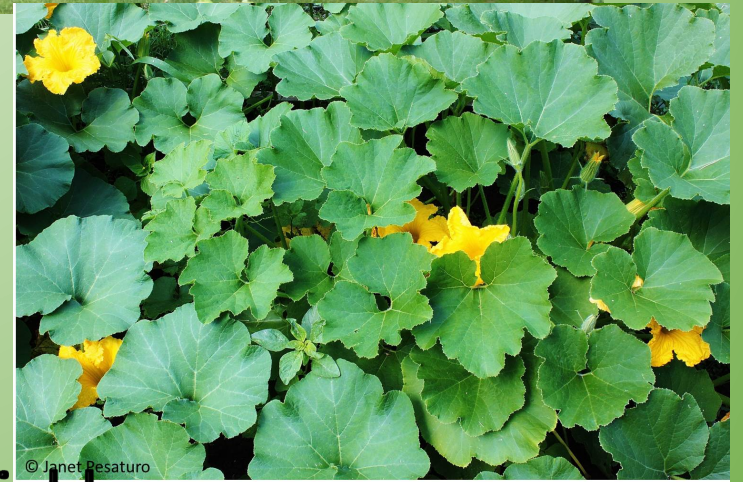
Unity 
Gardens

GardenFocused.co.uk

Thorney bushes like Gooseberries deter many animals from getting into garden



Many plants like Yarrow, onions, garlic, and Lavender deter deer



Racoons do not like the prickly vines of squash. Plant it around your corn

- **Companions repel or shield pest**
- Plants like onions repel some pests.
- Other plants confuse pest looking for a meal

Many mints confuse pest



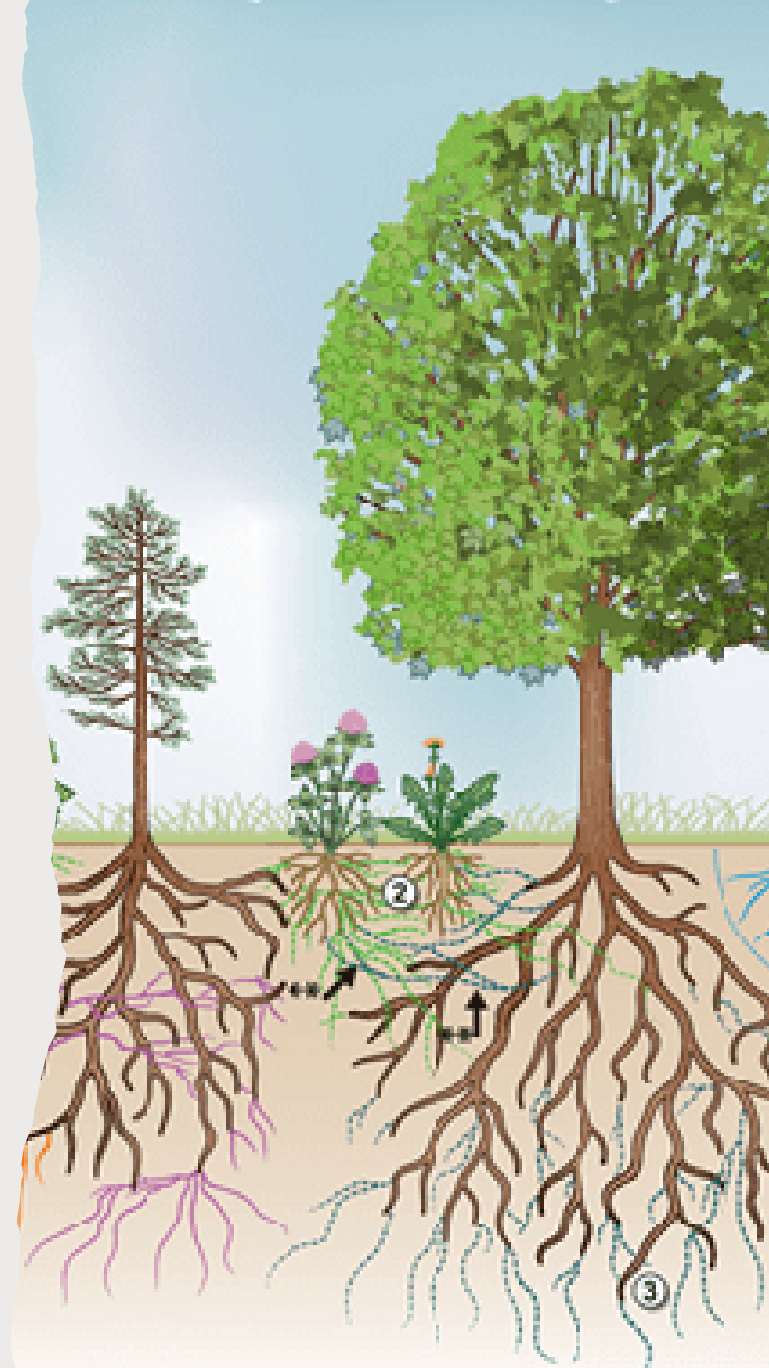
Trap crops

- A **trap crop** is a plant that attracts agricultural creatures usually insects, away from nearby **crops**. This form of companion planting can save the main **crop** from decimation by pests without the use of pesticides.



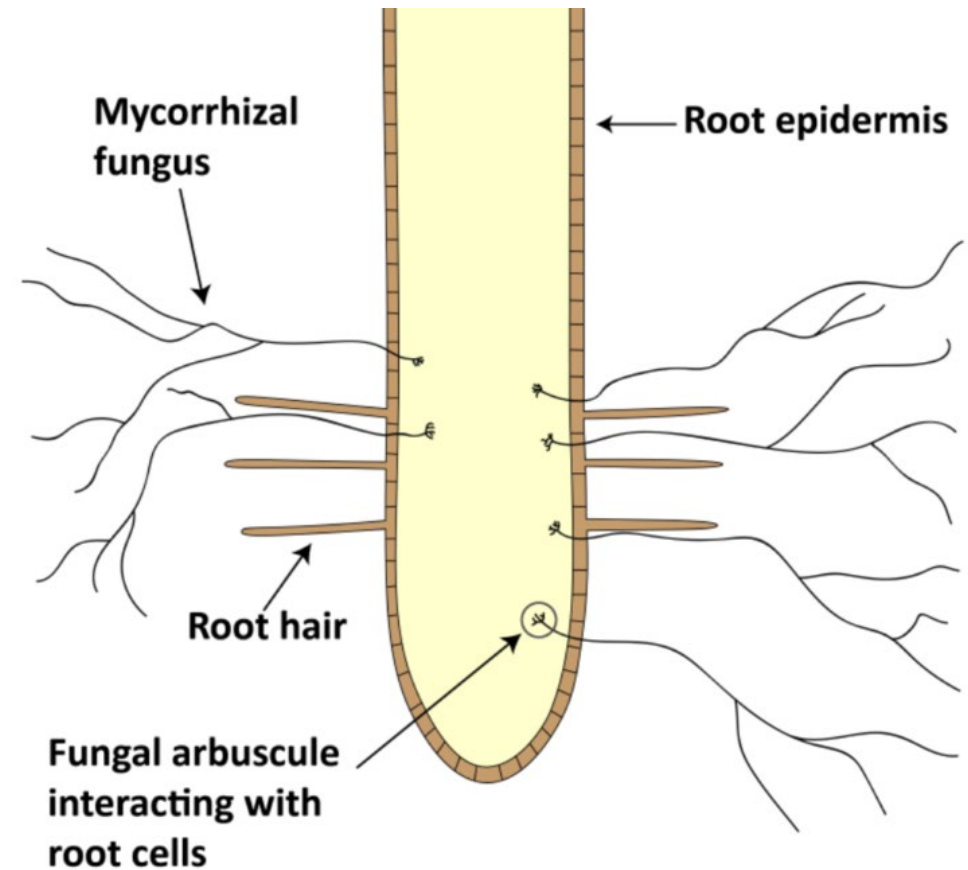
mycorrhizal fungi

- Keep soil covered with organic material to help produce Mycorrhizal Fungi
- Stop using phosphate fertilizer, which has an adverse effect on the fungi
- Avoid overwatering the garden
- Amend the soil with organic matter, such as compost and leaf mold Avoid over-tilling the soil as much as possible



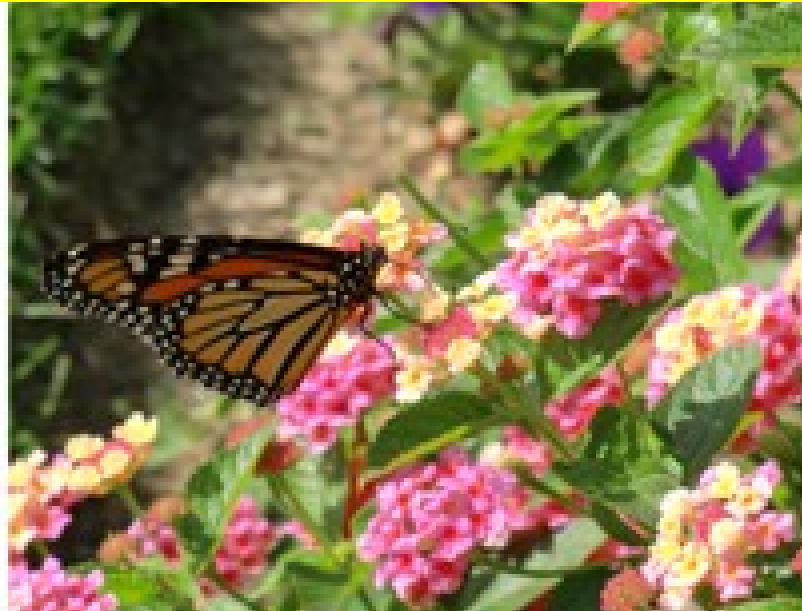


- **Companions** can enhance growth based on how they change the soil dynamic





• **Companions attract beneficial insects**—Every successful garden needs plants that attract the predators of pests.



Key to attraction

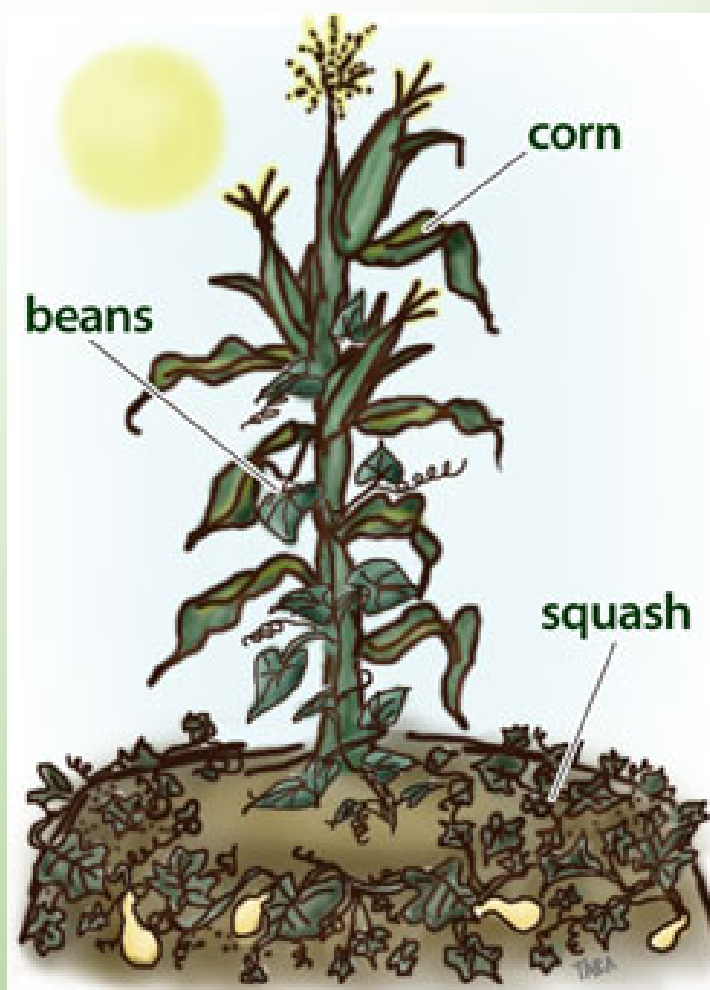
- Plant a large selection of flowers and herbs with different colors and sizes of flower.
- Plant flowers and herbs to bloom at different times.
- Use Natives, know your plant source.



Where to go for advice

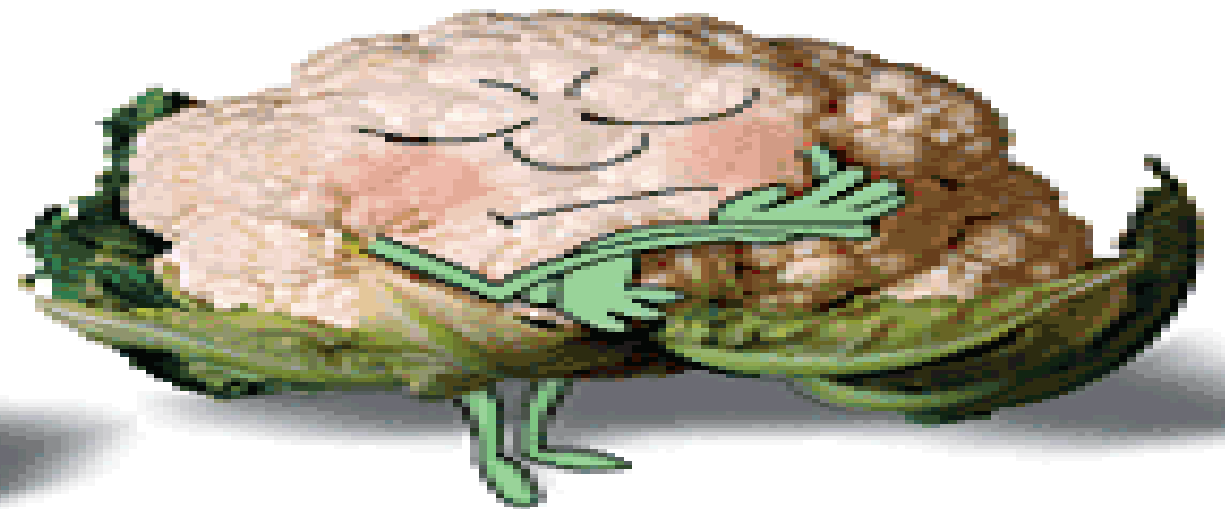
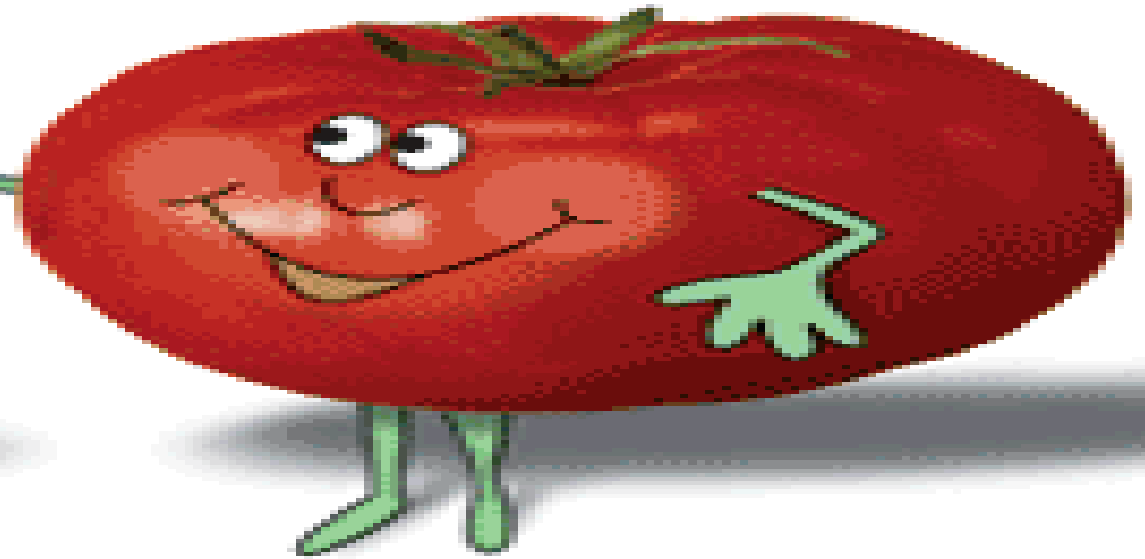
- <http://www.xerces.org/>
- <http://www.cardnonativeplantnursery.com/>
- <https://www.prairiemoon.com/>
- [Naturally Native Nursery](#)
- www.naturallynative.net


- **Companions use garden space efficiently**—Vining plants cover the ground, upright plants grow up. Two plants in one patch.
- **Intersperse vegetable beds with rows or islands of insectary annuals.** This will add decorative elements to your vegetable beds while luring beneficials toward prey.



*Direct-Sow, Easy-to-Grow:
The Ancient **Three Sisters** Method*





- 
- Tomatoes do not like being planted near cole crops
cole crops are plants that belong to the mustard (Brassica) family and are all descendants of wild cabbage.

Tomatoes dislike Potatoes & Fennel

- **Garlic:** planted between tomato plants protects them from red spider mites.
- **Borage:** Is suspected to repel Tomato Hornworm, but it's a fact that it brings in pollinators, plus its edible !
- **Chives and Onions:** are known to repel pest around Tomatoes
- **Marigolds:**The genus *Tagetes* is well known for it's qualities to repel garden pests.
- Other Tomato friends are **parsley, nasturtium, and carrot**





Cukes do not grow well with aromatic herbs.

Radish: in cucumber hills to repel cucumber beetles. Do not pull them even when they go to seed .

Dill: planted with cucumbers attracts hoverflies and predatory wasps.

Nasturtiums: with tomatoes and cucumbers to repel woolly aphids, whiteflies, squash bugs, and cucumber beetles.

* Raccoons dislike cucumbers so plant them around your corn to keep them out.

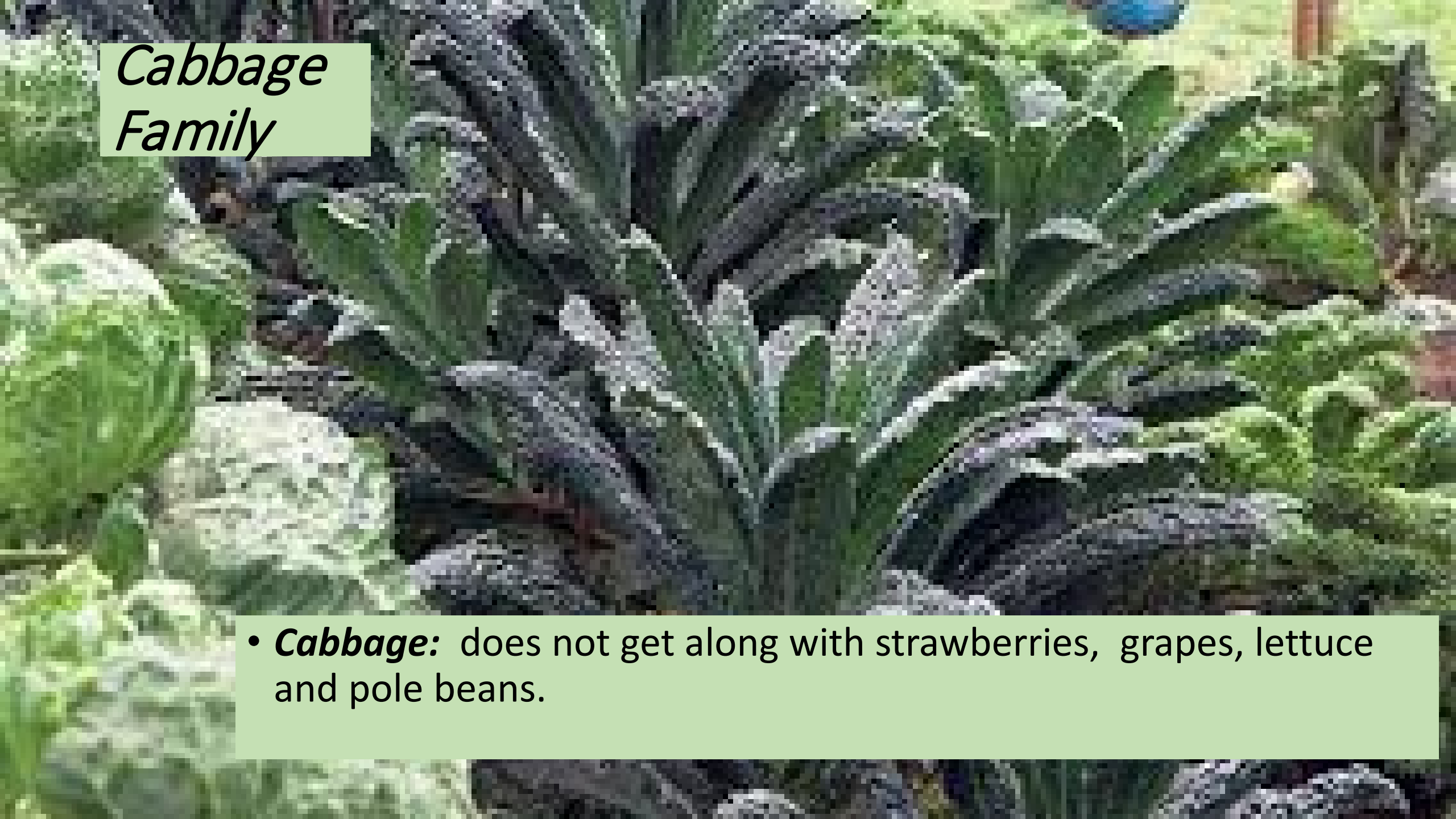




Basil: place next to and around pepper plants. It's claimed that growing basil next to peppers boosts their flavor, and may help to repel some common garden pests, such as aphids, spider mites, thrips, mosquitoes, and flies.

Chives: Growing chives near peppers can help to deter aphids and other insects, and is said to improve the flavor and yields of plants nearby. and because it's a perennial, a single planting can come back year after year.





Cabbage Family

- ***Cabbage***: does not get along with strawberries, grapes, lettuce and pole beans.

Cabbage: likes broccoli, brussels sprouts, celery, chard, spinach,
tomatoes

tomatoes and celery repel cabbage worms





Beans

- Avoid [planting beans](#) near all members of the **allium** family (onions, [leeks](#), garlic, scallions), because members of that family inhibit growth in beans.

Summer savory: helps repel bean beetles and improves the flavor and overall growth of bean plants.

Beans: carrots, beets, broccoli, Brussel sprouts, Corn

Bean plants are soil fixers they put nitrogen into soil





Corn

- Corn does not like tomatoes

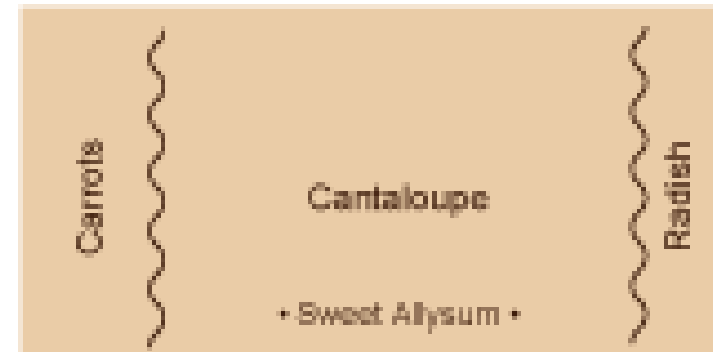
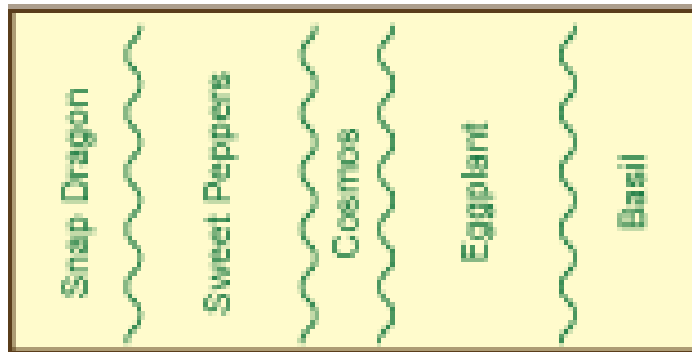
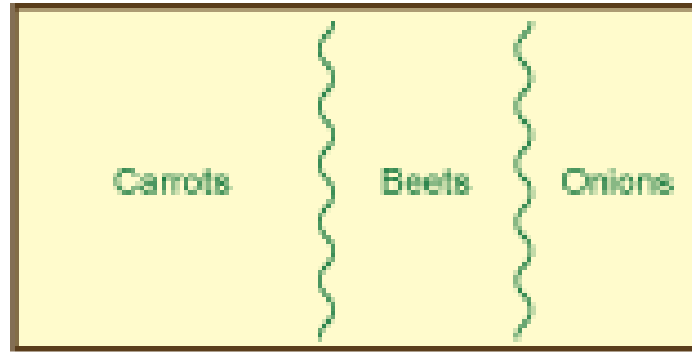
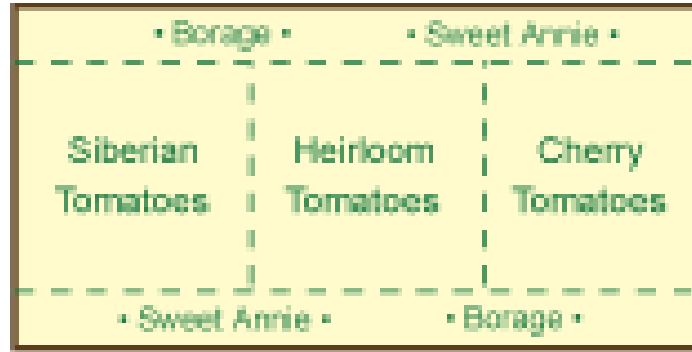
Corn likes: Beans, cucumber, melon, parsley, ,
potato, pumpkin, squash, peas.

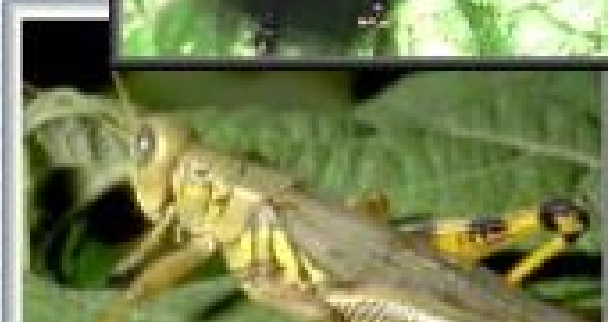
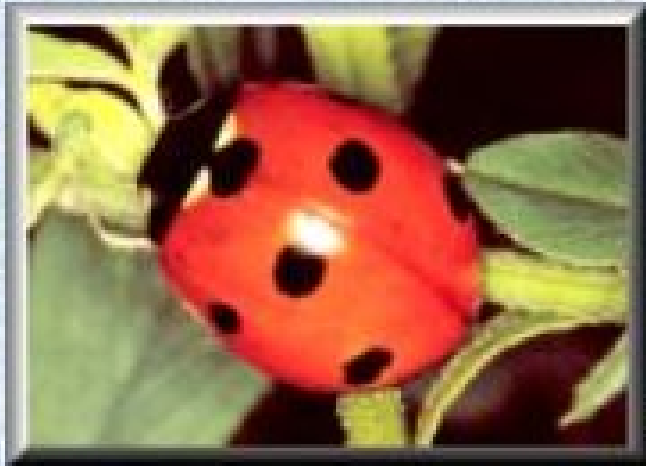
Beans and peas: put nitrogen into soil for corn to
take up.

Pole beans can grow up corn.

Squash can shade ground and hold in much needed
moisture





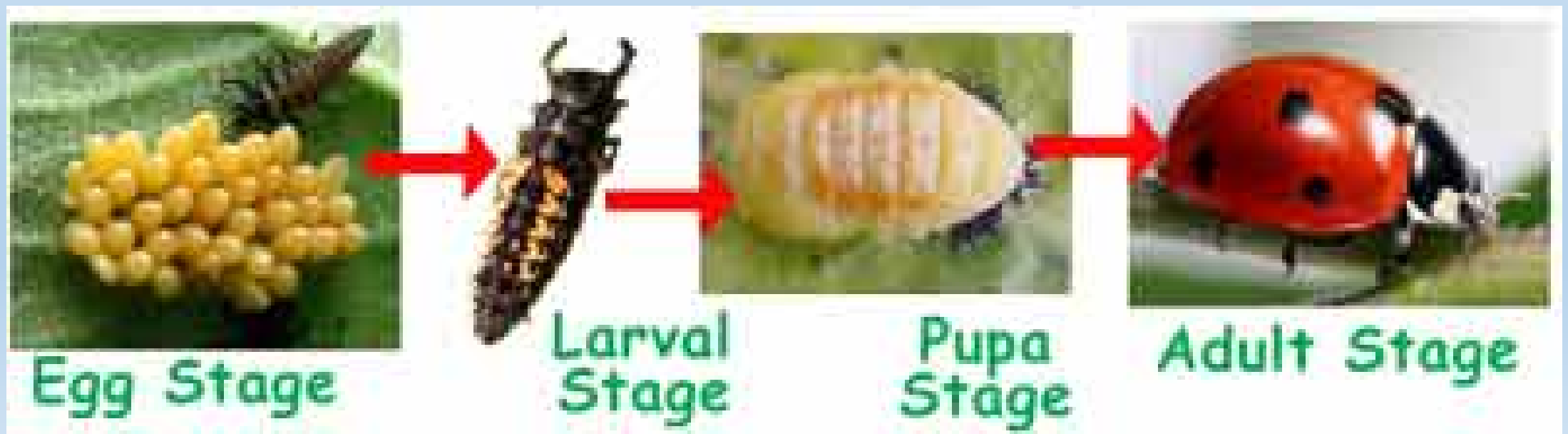


Bringing in the good guys

Lady Beetle



- lady beetles: are highly beneficial
- Both the adult lady beetles and the grub-stage larvae have chewing mouthparts and are voracious predators of other insects.
- Although each type of lady beetle has preferences for what they will eat (e.g., aphids, scales, spider mites, mealybugs, etc.), they tend to have fairly broad tastes and feed on almost any small arthropods (insects, mites) or insect eggs that they can successfully attack and ingest.



Plant

- Ladybugs require a source of pollen for food and are attracted to specific types of plants. The most popular ones have umbrella shaped flowers such as fennel, dill, cilantro, caraway, angelica, tansy, wild carrot & yarrow. Other plants that also attract ladybugs include cosmos (especially the white ones), coreopsis, and scented geraniums, dandelions.



Praying Mantis





- The praying mantis is an almost perfect insect-hunting machine.
- While they consume pests such as flies, crickets, moths and mosquitoes, they also devour other beneficial insects, including each other. Larger species (especially those in tropical areas) will chow down on lizards, small mammals and even hummingbirds.

Inviting them into your garden

- Leave egg cases in garden.

- They can be enticed by plants within the rose or raspberry family as well as by tall grasses and shrubbery that offers shelter.





Parasitic Wasp



- The quality that makes this insect family worth noticing is that most of them are parasitoids: parasites which usually kill their hosts.
- They like to feed on things we don't like in our gardens: hornworms, caterpillars, beetles, aphids, squash bugs and stink bugs are among the many pests that members of the Braconidae family consider gourmet delicacies.





Come on in !

- Attract parasitic wasps to the garden by planting species of herbs and flowers that supply the nectar and pollen they need, including [Queen Anne's lace](#), [dill](#), [cilantro](#) and [fennel](#). They also feed on the nectar of many flowering trees and shrubs.
- You can also buy parasitic wasps to release in the garden, but you should plant nectar and pollen plants first to make sure they stay where they are released.



Figure 7. Build a rock wall or a rock pile with large crevices for snakes to escape from severe weather and predators, to find food, and to give birth. (Drawing by Jenifer Rees.)

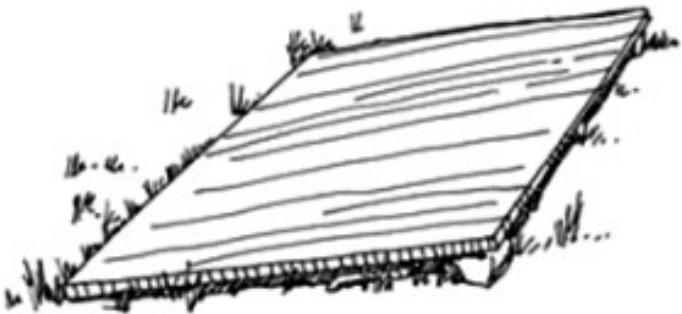


Figure 8. Snakes will seek out the shelter of a "snake board" in areas where similar types of shelter is lacking. (Drawing by Jenifer Rees.)

Make your yard eco friendly

- Create a habitat for snakes, toads and other garden friendly critters



Create Mini Gardens

Make a... mini-beast mansion

The different habitats offered by a mini-beast mansion will attract a real variety of creatures to your garden. In return they might even keep the pests away.

Start by getting up to five used pallets. Put the bottom one upside down to make larger openings for hedgehogs. Make sure they're on firm ground in slightly damp semi-shade close to overgrown plants or a pond. Put the largest ones at the bottom and secure them to each other if necessary. Then create different habitats by filling the pallets with...



straw, hay,
dead woods
and dry
sticks

for insects

for burrowing

for bees and
butterflies

nectar
rich potted
plants

upside
down plant
pot

for a
queen bee

stones,
bricks and old
roof tiles

for
amphibians

clay
drainage
tubes

for
insects

fir cones,
dry leaves
and bits of
bark

bundles
of garden
canes

for
solitary
bees

Why not send in a photo of your mini-beast hotel? For details go to bbc.co.uk/wildaboutyourgarden

Puddling for Butterflies

- Butterflies visit puddles for the salt and minerals.
- they receive enough moisture from the nectar they sip from flowers, but the sugary nectar lacks the salt male butterflies need.
- Puddling nutrients also help the males to produce pheromone, the chemical that males release to attract females.
- After you've made a puddling pool, sprinkle salt on it occasionally and add overripe fruit, stale beer, or leaf or manure compost from time to time to provide the salt and nutrients backyard butterflies need.



Bee waterer

Bees need fresh water near the hive

They like wet rocks or sand

Put water in first week of March or sooner



Thank You

Build Your Own Urban Eco System

